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Air Forces Actions at the Beginning of a War Without the Employment of Nuclear Weapons

by

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In his article* Marshal of Aviation S. Krasovskiy examined certain problems concerning the actions of air forces in operations employing conventional means of destruction. In our view, the subject of this article is extremely timely, and its basic propositions have practical significance for the troops. We would like to express our opinion on certain problems of this broad subject.

First of all, on the efficient employment of air forces in an operation. At the start of a war using only conventional means of destruction, the strategic rocket forces and a significant part of the operational-tactical missiles will be ready to employ nuclear weapons. Therefore, almost all targets, including fixed targets, located in the zone of the fronts (beyond the range of artillery means) and in the depth of the theater of military operations must be destroyed and neutralized by the forces and means of front aviation and long range aviation. Of course, the volume of tasks assigned to the air forces in this situation will increase greatly. As an example, we will examine combat against missile/nuclear means. Taking into consideration arriving reserves, there can be up to 57 Honest John, Corporal, Sergeant, Pershing and Little John missile battalions in the zone of operations of front troops, as applied to the Western Theater of Military Operations; of these, 29 will be deployed at depths up to 300 kilometers and the remaining 28 (arriving reserves) at depths greater than 300 kilometers. In the case of a nuclear war, these means are destroyed by front aviation operating jointly with operational-tactical missile troops; sometimes part of the long range aviation forces are also attached. But if only conventional means of destruction are employed, the missiles of the ground forces take no part in the armed conflict and all 57 enemy missile battalions have to be destroyed by aviation. This doubles the scope of the task for aviation. At the same time its capabilities are decreasing due to the necessity of constantly maintaining a significant part of its aircraft at airfields ready to employ nuclear weapons.

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How can air forces be most efficiently used under the given conditions, and what are the most effective ways which can be suggested?

First, it is necessary to establish the correct ratio between the forces and means designated to participate in operations using only conventional ammunition and the forces and means required for the employment of nuclear weapons. The experience of exercises has shown that this ratio should be approximately as follows: 60 to 65 percent of long range aviation forces and up to 25 to 30 percent of front aviation forces should be allocated in the event actions are conducted with nuclear weapons; the remaining forces should be used with conventional means of destruction.

Aircraft assigned to employ nuclear weapons and support aircraft must be in constant readiness for take-off and must be based at alternate natural-surface airfields located much farther away from the provisional front line than aircraft designated to operate with conventional means of destruction. In this connection, it is advisable to divide the air forces into nuclear and non-nuclear echelons. It is very important that entire large units and units be included in each of these echelons. Then, it will be easier to plan their actions and control them in the course of an operation; it will also be simpler to organize their support and in flight to maintain the previously established combat formations and positions of each crew within the formations.

Second, it is necessary to concentrate the efforts of all aviation on the destruction, first of all, of enemy missile/nuclear and aviation means of attack, putting other tasks aside at first (the destruction of military industrial targets, combating enemy reserves, etc.)

One might logically ask the question, why it would be necessary to destroy missiles and nuclear means first if they are not being employed by the enemy. Would it not be better to attack them later when there is a clear threat that the war will build to a nuclear war, or when the enemy begins to employ nuclear weapons?

Research and the experience of exercises show that such is not the case. Missile/nuclear means can be introduced by the enemy at any time. The more effectively and rapidly we destroy them, the longer the amount of time before they can be used against us, and the more favorably the situation will develop should the enemy decide to employ nuclear weapons.

The need for the immediate destruction of the aviation means of the probable enemy is due to the existence of large and well-trained tactical aviation, one of the chief tasks of which is considered to be the direct support of one's own troops during military actions in which nuclear weapons are not employed. It is difficult to imagine that our ground forces and navy under these conditions could successfully initiate and carry out operations unless our aviation had gained air supremacy. The experience of the start of the Great Patriotic War of 1941-1945 shows that the fascist German air forces, having taken the initiative in 1941, by their actions paralyzed the movement of our ground forces on many axes and practically prevented any movement over the roads during daylight hours.

Missile/nuclear and aviation means should be combated on a broad front by small subunits of fighter-bombers and fighters and by individual reconnaissance crews. An air regiment armed with SU-7B aircraft must be assigned a zone 100 by 150 kilometers in which it will independently search for and destroy enemy missile/nuclear means and aircraft. Each zone should be divided into 20 by 60-kilometer sectors in which flights and pairs of aircraft can conduct "hunts". A regiment with SU-7B aircraft is capable of carrying out three sorties per day, and of destroying up to ten batteries of Sergeant or Little John missiles with their cannon and rockets; they are also capable of destroying a significant part of the tactical aircraft at eight to ten airfields with small-fragmentation and antitank bombs.

It will require a significant amount of effort to combat enemy aircraft in the air, and particularly at low altitudes. In order to intercept such aircraft, front fighters should be employed in several echelons: the first-echelon fighters should be used in groups of two to four aircraft in zones extending forward 70 to 100 kilometers from the front line (beyond the zones of operation of the Hawk and Nike Hercules surface-to-air guided missiles located in the forward zone); the second, more powerful echelon should operate in alert zones over their own territory, 20 to 40 kilometers from the front line; and the third echelon (at least 50 to 60 percent of all fighters) should be at the airfields at readiness levels No. 1 and No. 2. A regiment of MIG-21PF aircraft using air-to-air missiles is capable of destroying up to 45 to 50 air targets per day.

Front bomber aviation should be used for the mining of airfields and the subsequent destruction of aircraft on them. 50X1-HUM

TU-16 long range aviation aircraft using conventional means of destruction must be assigned to destroy enemy missile/nuclear means and

aircraft at airfields located beyond the range of front aviation. TU-16 aircraft can carry various types of high-explosive bombs (from 24 FAB-100 to two FAB-3,000 aerial demolition bombs), incendiary bombs, and chemical bombs (24 individual RBK-250 cluster bombs or 18 RBK-250 bombs). In addition, the TU-16 can employ air-to-ground cruise missiles to destroy targets having radar contrast.

Calculations show that nine TU-16 aircraft are needed to destroy one airfield with conventional means, 10 to 15 to destroy a missile launch site, and 12 to 15 to destroy a 100 by 200-meter depot, with five or six aircraft used to support each group.

Third, it is necessary to make more decisive and bold use of part of the air forces of adjacent fronts, which have still not been deployed or where aggressive actions are not being conducted, as well as the air forces located in adjacent interior military districts.

During the Second World War air forces of adjacent units were moved frequently and with great effectiveness for strikes against the enemy in support of an offensive by one front. For example, in the Konigsberg Operation of the 3rd Belorussian Front, conducted from 6 through 13 April 1945, large units of the adjacent 3rd and 4th Air Armies were assigned to strike ground targets. In the Berlin Operation bomber large units of the adjacent 2nd and 4th Air Armies were assigned for individual strikes in support of the 4th Belorussian Front.

In our view, the reinforcement of the aviation of one front at the expense of the air forces of adjacent fronts and interior military districts is now obligatory. This reinforcement can be accomplished by means of a strike against enemy targets by an adjacent front from its own airfields, including a landing for refueling at the airfields of adjacent air armies or a return to its base airfields.

Of course, such opportunities do not always arise. Insofar as the combat strength of the air army of a front does not fully meet the increased needs of the troops, particularly at the start of a war in which nuclear weapons are not employed, ways must be found to reinforce the air army and, primarily, to increase the number of fighter-bomber and reconnaissance aircraft.

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Research and calculations show that in operations employing only conventional means of destruction, each combined-arms (tank) army in the first echelon of a front must have at least three regiments of

fighter-bombers, while the air army as a whole should contain nine to 12 fighter-bomber regiments. In this case an air army operating on the main axis will be able not only to combat enemy missile/nuclear and aviation means of attack, but also to carry out all other tasks in support of the front.

Ways must also be found to increase the reconnaissance aviation of a front air army. Research has shown that at least 300 aircraft sorties for tactical reconnaissance and up to 100 sorties for operational reconnaissance must be carried out on the first day of a war in support of one front operating on the main axis. Taking losses into consideration, one tactical reconnaissance regiment at 80 percent combat strength with a sortie rate of three to 3.5 can make up to 90 to 100 sorties on the first day, while an operational reconnaissance regiment under the same conditions with a sortie rate of two to 2.5 can make up to 85 sorties. From this it is not difficult to draw a conclusion concerning the quantity of reconnaissance aviation forces needed in the air army of a front operating in the Western Theater of Military Operations.

Under the conditions we have discussed, the negotiation of enemy air defense by our air forces is extremely difficult. If, as a result of the first nuclear strike by our rocket forces, up to 25 percent of the surface-to-air guided missile launchers and up to 40 percent of the fighters on airfields can be put out of commission by the shock wave alone, and if up to another 10 to 12 percent of the launchers are neutralized as a result of radioactive contamination of the terrain by the time our aviation reaches the target area, enemy air defense will still initially retain its full effectiveness in a war in which nuclear weapons are not employed.

The most important method of negotiating air defense -- one that has been tested in exercises -- is for long range aviation and front aviation to operate from low altitudes and for flights to be conducted with variable profiles. By lowering the flight altitude from 500 to 100-50 meters, the probability of destruction of aircraft is reduced by a factor of eight to ten.

If aircraft of front aviation fly at altitudes of 50 to 100 meters, the probability of their timely detection by the enemy fluctuates between zero and 0.3, while at altitudes of 200 meters this probability equals 0.5. If at the same time the flight speed of the aircraft is 1,100 to 1,200 kilometers per hour, surface-to-air guided missiles cannot be fired, and the effectiveness of antiaircraft artillery fire is reduced by 30 to 40 percent. Therefore, flights by all types of aircraft over enemy territory

must, as a whole, be conducted at minimum possible altitudes and maximum speeds.

Active and passive warfare against enemy radioelectronic means and the neutralization of his surface-to-air guided missiles have as much influence on the effectiveness of air defense. It has been calculated that the use of active and passive high-intensity jamming can decrease the countermeasures taken by aggressive enemy air defense means by 20 to 25 percent.

Frequently it is necessary to assign fighter-bomber aviation forces to immediately destroy or neutralize individual batteries of surface-to-air guided missiles and antiaircraft artillery in order to break through the enemy air defense in certain sectors, particularly in a tactical zone. Calculations show that from six to ten SU-7B aircraft must be assigned for each surface-to-air guided missile battery (the loss of one or two aircraft may be expected in this case).

In general, measures aimed at negotiating air defense must be taken with the consideration that the air forces could first destroy enemy missile/nuclear and aviation means of attack. The accomplishment of these interrelated tasks will make it possible to develop the offensive successfully and, subsequently, to transfer part of the forces of front aviation and long range aviation to support the troops and to combat enemy reserves, as well as to perform other tasks that arise in the course of offensive operations by fronts.

Military actions conducted without the employment of nuclear weapons entail certain specific characteristics in the organization and implementation of control over units and large units of long range aviation and front aviation. This results from the necessity of planning the actions of all air forces available in a theater of military operations according to two variants, as well as to maintain the nuclear echelon of aviation in constant readiness for flight in order to carry out its combat tasks. We believe that control of all air forces in a theater must be organized and carried out by the air forces command. For these reasons, an air forces forward command post must be established in the theater in the area where a representative of the General Headquarters of the Supreme High Command is located; the forward command post could include one of the deputies of the Commander-in-Chief of the Air Forces with an operations group from the Main Staff. 50X1-HUM

According to the experience of the Great Patriotic War, the air forces commander or his deputy, located with an operations group and communications means in the area of the command post of one of the main fronts, ensured cooperation among several air armies of front aviation, those air corps of the Reserve of the Supreme High Command which had been assigned to the operation, and long range aviation forces. Brief plans for the employment of these forces in the offensive operation of a group of fronts were developed; additional tasks were set in the course of the operation; and the execution of these tasks was monitored. It is fully obvious that these principles for controlling aviation have not lost their force even under modern conditions.

The control of aviation large units and units must be rigidly centralized directly in the air armies of front aviation and in the air corps of long range aviation; this ensures that air forces in the air are redirected to the necessary axis.

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